

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Applicant: Haan
Serial No.: 10/829,204
Filed: April 22, 2004
Title: METHOD OF ABLATING BIOLOGICAL MATERIAL WITH
ELECTROMAGNETIC RADIATION DELIVERED BY AN OPTICAL
FIBER
Examiner: Shay
Art Unit: 3769
Confirmation No.: 5533

VIA ELECTRONIC FILING

PRE-APPEAL BRIEF REQUEST FOR REVIEW

On February 18, 2009, the Examiner issued a first-action final office action in the present application, after an RCE, rejecting claims 1-12, 15-30, 33-43, and 46-51. On March 31, 2009, one of the Applicants' representatives conducted an interview with the Examiner. During the interview, the Examiner indicated that certain claim amendments proposed by the Applicants would overcome the Kittrell reference (U.S. Pat. No. 5,304,173), and could potentially overcome the Fischer reference (U.S. Pat. No. 5,835,647). The Interview Summary dated April 6, 2009 confirms this. On May 1, 2009, Applicants filed a response to the February 18, 2009 Office Action along with claim amendments that were consistent with the discussions held during the March 31, 2009 interview and the interview summary. Despite this, on June 12, 2009, the Examiner issued an Advisory Action indicating that none of the amended claims would be allowable including amendments to the claims that were agreed to overcome the Kittrell reference in the Interview Summary. As indicated in the June 12, 2009 Advisory Action, the claim amendments filed on May 1, 2009¹ were entered for purposes of appeal, thus this Pre-Appeal Brief Request properly considers the claims filed on May 1, 2009.

¹ As of the May 1, 2009 amendment, only claims 1-12, 15-30, 33-43, and 46-47 are pending. Applicants canceled claims 48-51 without prejudice.

For the sake of brevity, Applicants will not repeat the previously summarized teachings of the Kittrell and Fischer references as discussed on pages 11-13 of the Applicants' May 1, 2009 response.

Applicants respectfully assert that the Examiner has made at least three clear legal and/or factual errors by rejecting the present claims using Kittrell and Fischer.

First, Kittrell and Fischer, either alone or in combination, do not teach, disclose, suggest or make obvious the present claims.

Kittrell's brief remark that a graded index optical fiber can be used within a flexible catheter body that is 50 to 200 cm long is insufficient to reject the present claims. Specifically, the Examiner ignores the recitation of, or language similar to, selecting a graded index optical fiber having a pre-determined graded index core profile and a pre-determined length selected to modify the electromagnetic radiation to a modified output electromagnetic radiation.

The Examiner's position that Kittrell inherently anticipates or makes obvious this limitation even though there is no "intent" to perform the steps recited in the claims ignores the recited elements. Indeed, the recitation of "to modify the electromagnetic radiation to a modified output" is not merely surplusage. Rather, import must be given to the actual language recited by the claims. *See* M.P.E.P. § 2111.01 ("...the claims must be interpreted as broadly as their terms reasonably allow." (emphasis added)). To reject the claims using the logic provided by the Examiner effectively ignores the portion of the claim that requires that the graded index optical fiber be selected in order to "modify the electromagnetic radiation to a modified output."

The Examiner's rejection of the present claims using Fischer also fails for similar reasons as those discussed above with respect to Kittrell. While Fischer discusses the use of graded-index fibers, Fischer merely discusses that these fibers can be used along with a quartz rod in order to obtain mode-homogenized laser radiation. Fischer does not state how, or even that, the graded-index fiber can affect the intensity distribution of the fiber as recited in the present claims. Rather, Fischer actually teaches away from using the fiber itself to homogenize an emitted intensity distribution function. *See e.g.* Fischer col. 1, ll. 27-33; col. 2, ll. 18-10.

Regarding the Examiner's second clear error, the Examiner's attempts to "shoehorn" Kittrell and Fischer as a basis for rejecting the claims are inappropriate. The Examiner's logic appears to be as follows: i) the present application discloses that graded-index fibers over a certain threshold will create a substantially Gaussian intensity, ii) the present application also discloses that graded-index fibers over 20 cm will work to create the recited invention, and iii) the cited references disclose graded-index fibers having similar dimensions, therefore, the cited references must disclose the "selecting" recited in the claims.

The Examiner's logic appears to be based on the idea that only the length and diameter of a graded-index fiber has an effect on its overall performance. This logic is incorrect. Merely selecting a graded-index fiber over 20 cm will not necessarily result in the desired modified output recited in the claims. For example, other variables exist such as the ranges of refractive indexes present in the fiber and the profile by which the refractive indexes vary. *See e.g.* Paragraph [0027] of the present application.

Regarding the Examiner's third clear error, the Examiner has failed to point out how either Kittrell or Fischer anticipate or make obvious the recitation of, or language similar to, "modifying the coupled electromagnetic radiation based on the pre-determined graded index and the pre-determined length of the optical fiber." For example, Paragraph [0029] of the present application discusses:

[0029] According to some embodiments of the present invention the illumination source 202 may be, for example, a CTH:YAG laser capable of generating a wavelength of approximately 2.12 μ m, a Th:YAG laser capable of generating a wavelength of approximately 2.0 μ m. an Nd:Yag laser capable of generating laser radiation having a wavelength of approximately 1.06 μ m or a Ho:Yag laser capable of generating laser radiation having a wavelength of approximately 2.1 μ m (wherein, for example, approximately 2.1 μ m includes, at least, 2.12 μ m). Other illumination sources, generating beams with other characteristics, may be used. Preferably, the output wavelength or wavelengths generated by the illumination source 202 are within the wavelength tolerance of the GRIN optical fiber 212. However, according to other embodiments of the present invention, the illumination source 202 may be adapted to generate coherent or non-coherent electromagnetic radiation having a wavelength or wavelengths not within or only partially within the tolerance of the GRIN fiber 212.


Thus, even if it is assumed, *arguendo*, that Kittrell and Fischer disclose selecting an optical fiber as the Examiner argues, the Examiner has still not shown how either of the cited references discuss or make obvious that the coupled electromagnetic radiation is varied based on the pre-determined graded index.

In an effort to be succinct, Applicants' have kept the foregoing comments brief. Elaboration on Applicants' arguments can be found in other papers filed throughout the pendency of the present application. For example, please refer to pages 9-13 of Applicants' response filed on May 1, 2009.

Based on the foregoing, this application is believed to be in allowable condition, and a notice to that effect is respectfully requested. If a telephone conversation with Applicant's representative would help expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at (617) 542-6000.

The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account 50-0311, Reference No. 35678-604C01US. The Director is further authorized to charge any required fee(s) under 37 C.F.R. §§ 1.19, 1.20, and 1.21 to the abovementioned Deposit Account.

Respectfully submitted,


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